TOSHIBA

STEREO AMPLIFIER

SB-A10

SPECIFICATIONS

Power Output	
40 Hz ~ 20 kHz both channels driven:	2 x 20 W, 8 ohms
1 kHz both channel driven:	2 x 22 W, 8 ohms 2 x 24 W, 4 ohms
Total Harmonic Distortion:	at 8 ohms
Rated power output:	0.1%
1 W:	0.08%
Intermodulation Distortion:	0.1%
Damping Factor:	50
Input (Sensitivity/Impedance)	
PHONO:	2.5 mV/47K ohms
TUNER/AUX:	150 mV/47K ohms
TAPE:	150 mV/47K ohms
PHONO Overload Level:	180 mV/rms at 1 kHz
Output Level	
TAPE REC:	150 mV

Frequency Response	
PHONO (RIAA Equalization):	30 Hz to 20 kHz ±0.3 dB
AUX, TAPE:	30 Hz to 35 kHz $^{+0}_{-1.5}$ dB
Tone Controls:	
BASS:	±10 dB (100 Hz)
TREBLE:	±10 dB (10 kHz)
Loudness Contour:	+8 dB (100 Hz)
	+4 dB (10 kHz)
Signal to Noise Ratio (IHF short-circuited A network, rated power)	
PHONO:	75 dB
AUX, TAPE:	90 dB
■ GENERAL	
Power Supply:	220V 50 Hz~or 240V 50 Hz~
Power Consumption:	180W
Weight:	3 kg
Dimensions (W x H x D):	257 x 54 x 208 (mm)

Specifications are subject to change without notice.

TE, TU, AY

1. OPERATING CONTROLS

FRONT VIEW

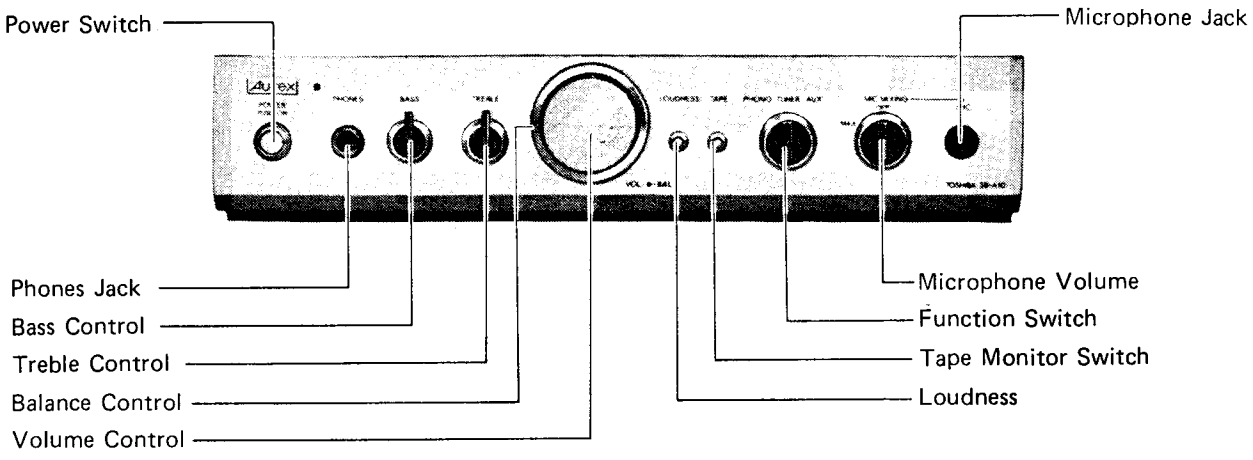


Figure 1.

REAR VIEW

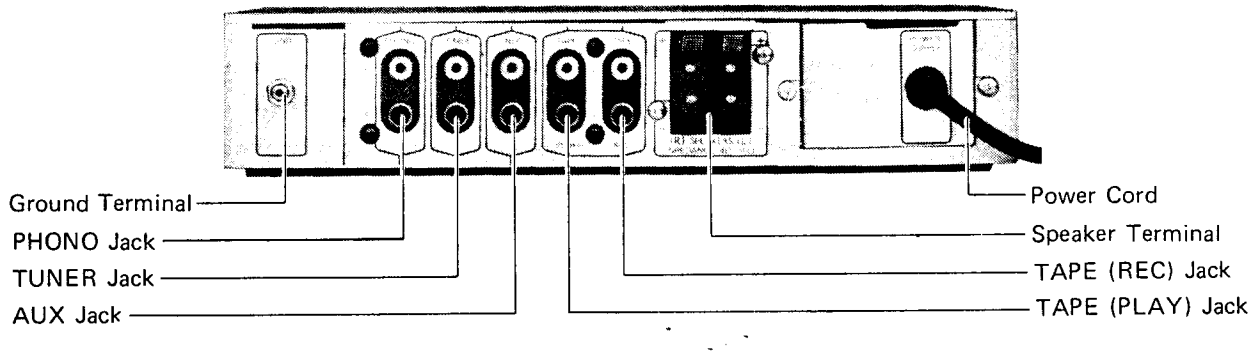


Figure 2.

2. DISASSEMBLY INSTRUCTIONS

PANEL REMOVAL

1. Remove the four knobs ①, ②, ③. See Figure 3.
2. Remove seven screws ④, ⑤, ⑥. See Figure 4.
3. Draw the front panel toward you as shown in Fig. 5. Remove the front panel by detaching the LED P.C. Board. See Figure 5.

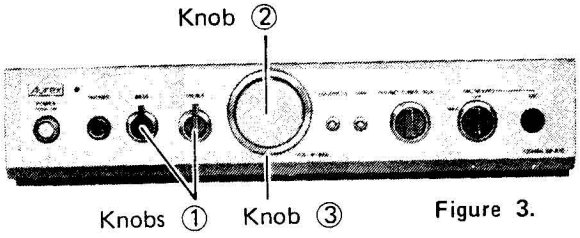


Figure 3.

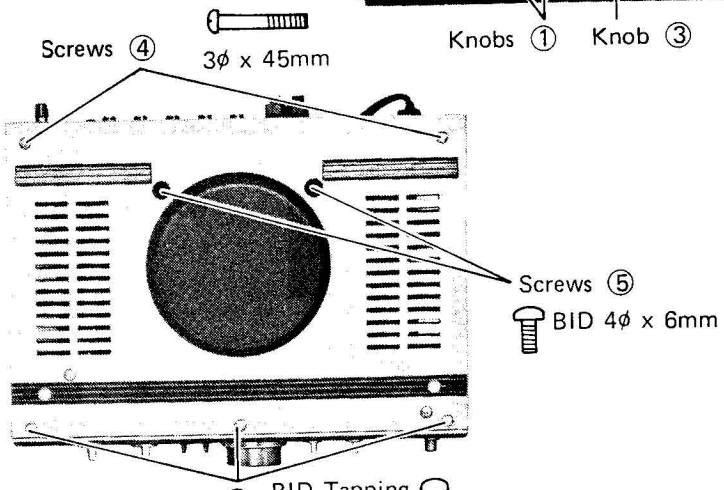


Figure 4.

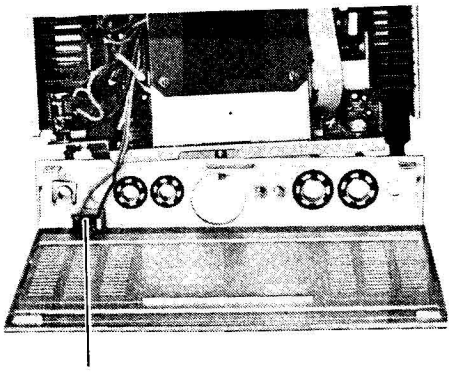


Figure 5.

CHASSIS REMOVAL

1. Remove two screws ⑦. See Figure 6.
2. Remove seven screws ⑧, ⑨. See Figure 7.
3. Lift up the chassis as shown in Fig. 8 and remove the chassis.

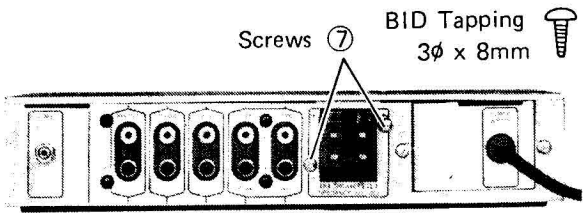


Figure 6.

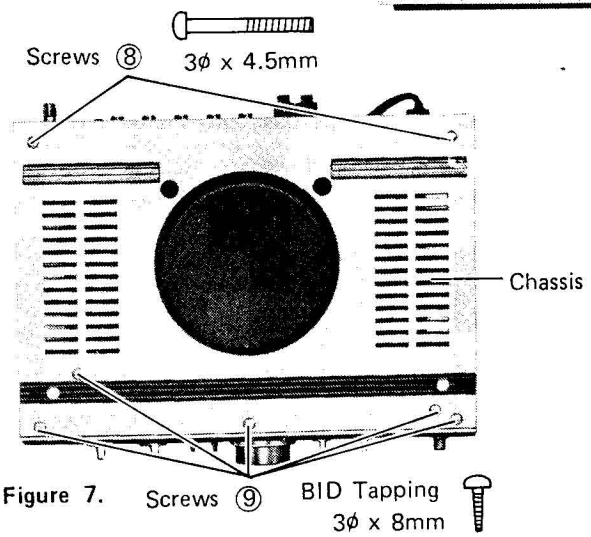


Figure 7.

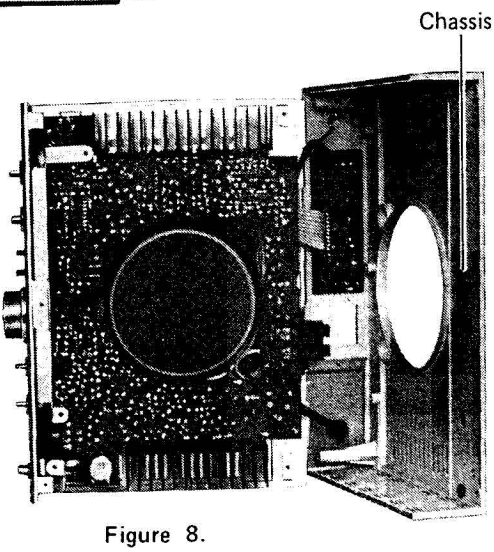


Figure 8.

3. REPLACEMENT OF CHIP PARTS

1. Use substitutions whose parts numbers are indicated in the parts list when replacing chip parts.
2. **REMOVING CHIP PARTS**
   Melting solder on both ends of chip parts with a soldering iron and remove it by turning with tweezers as shown in figure 9.

NOTE: 1) Confirm the constant of chip resistors by in-circuit resistance value.
2) Never use the chip parts removed again.

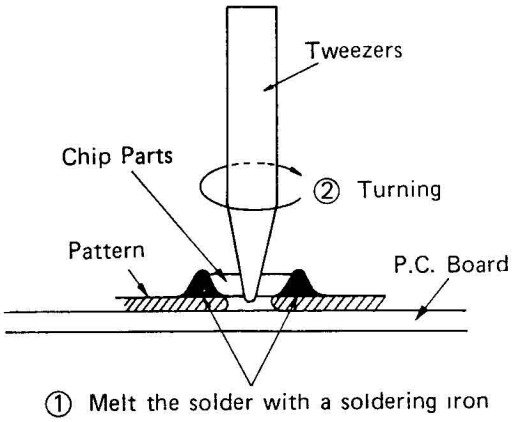


Figure 9.

4. BLOCK DIAGRAM

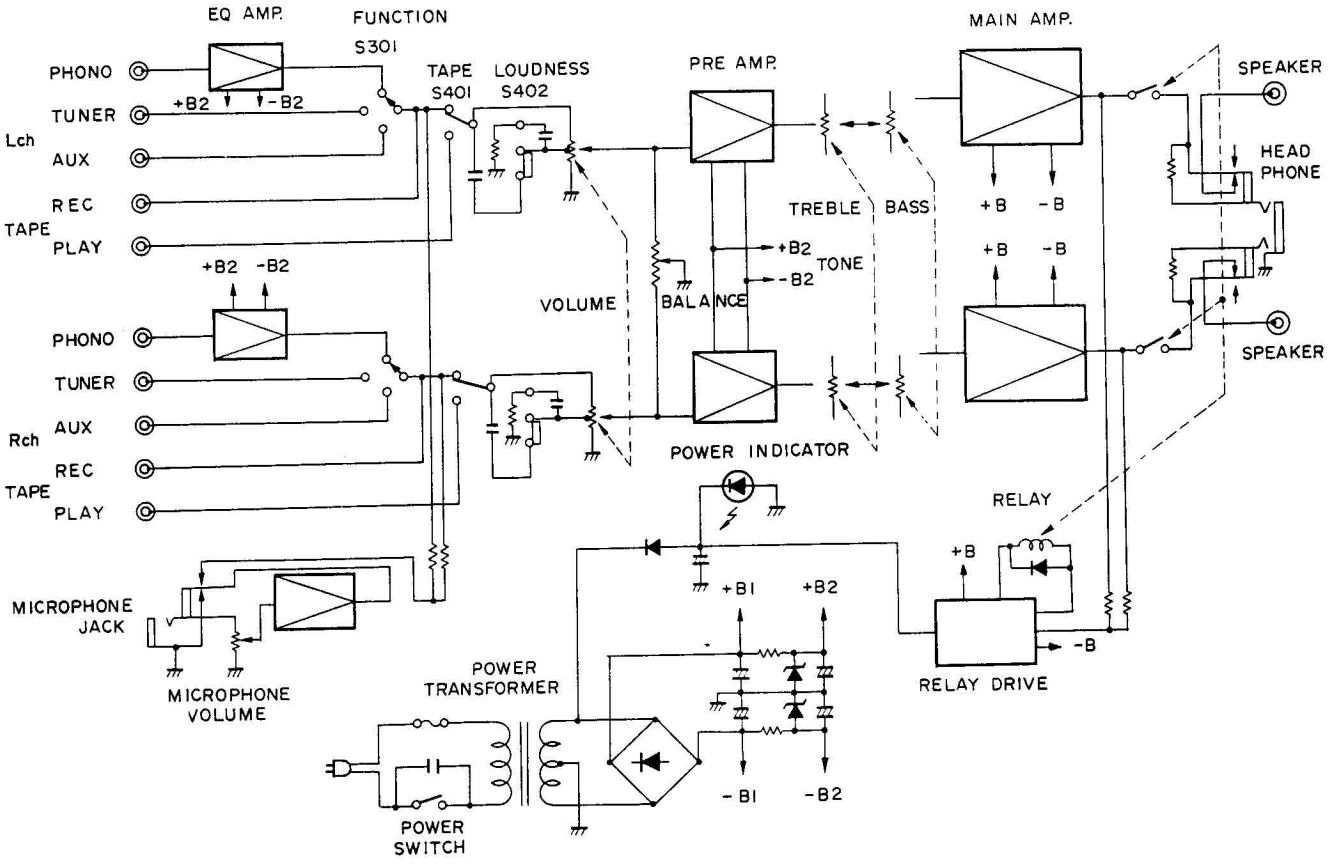


Figure 10.

5. ELECTRICAL PARTS LOCATIONS

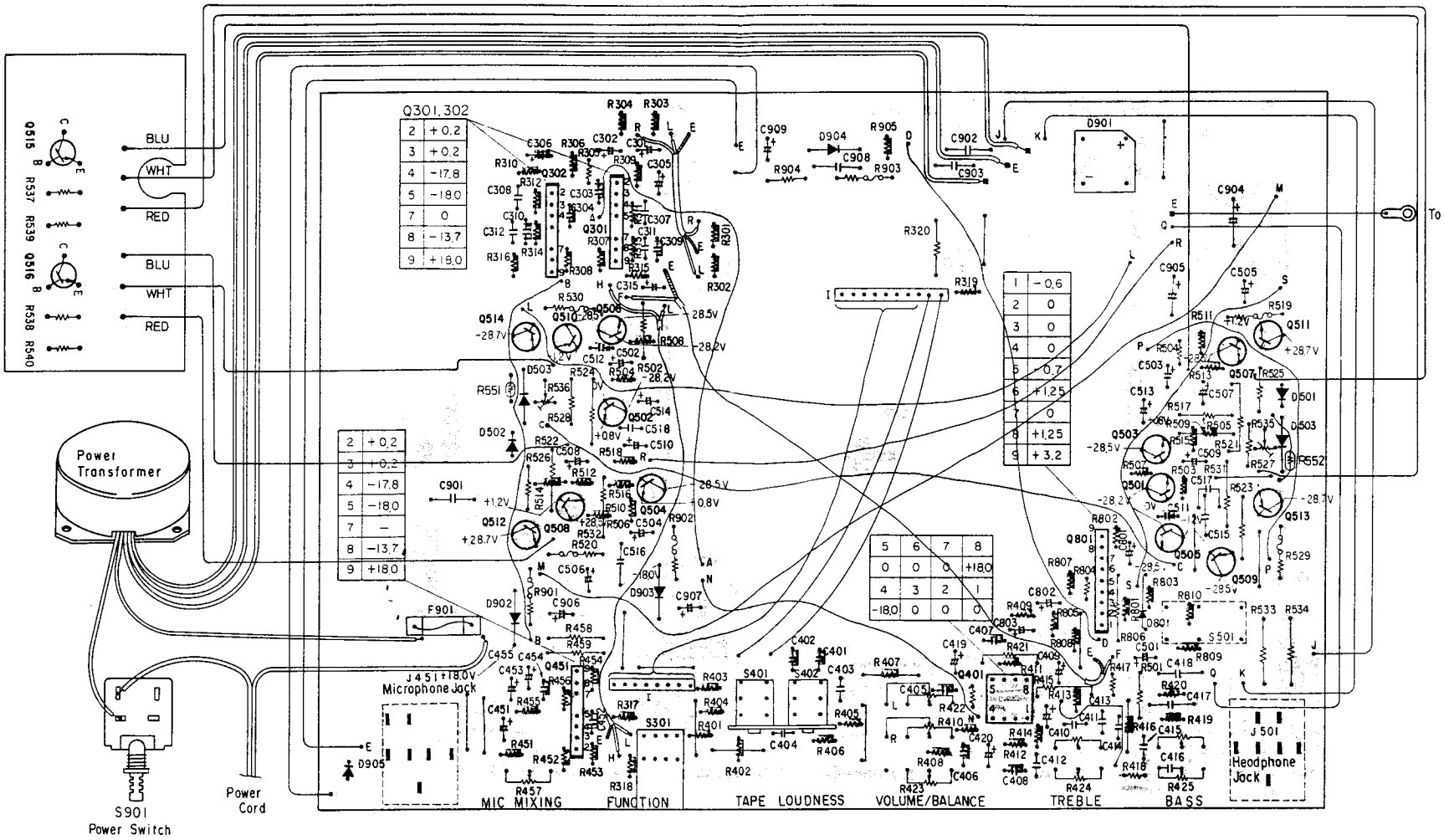


Figure 11.

Note : The green indication of resistors and capacitors shows chip parts.

As the resistance value of each chip resistor varies by the polarity of circuit tester, the minimum and maximum value are indicated at power off condition.

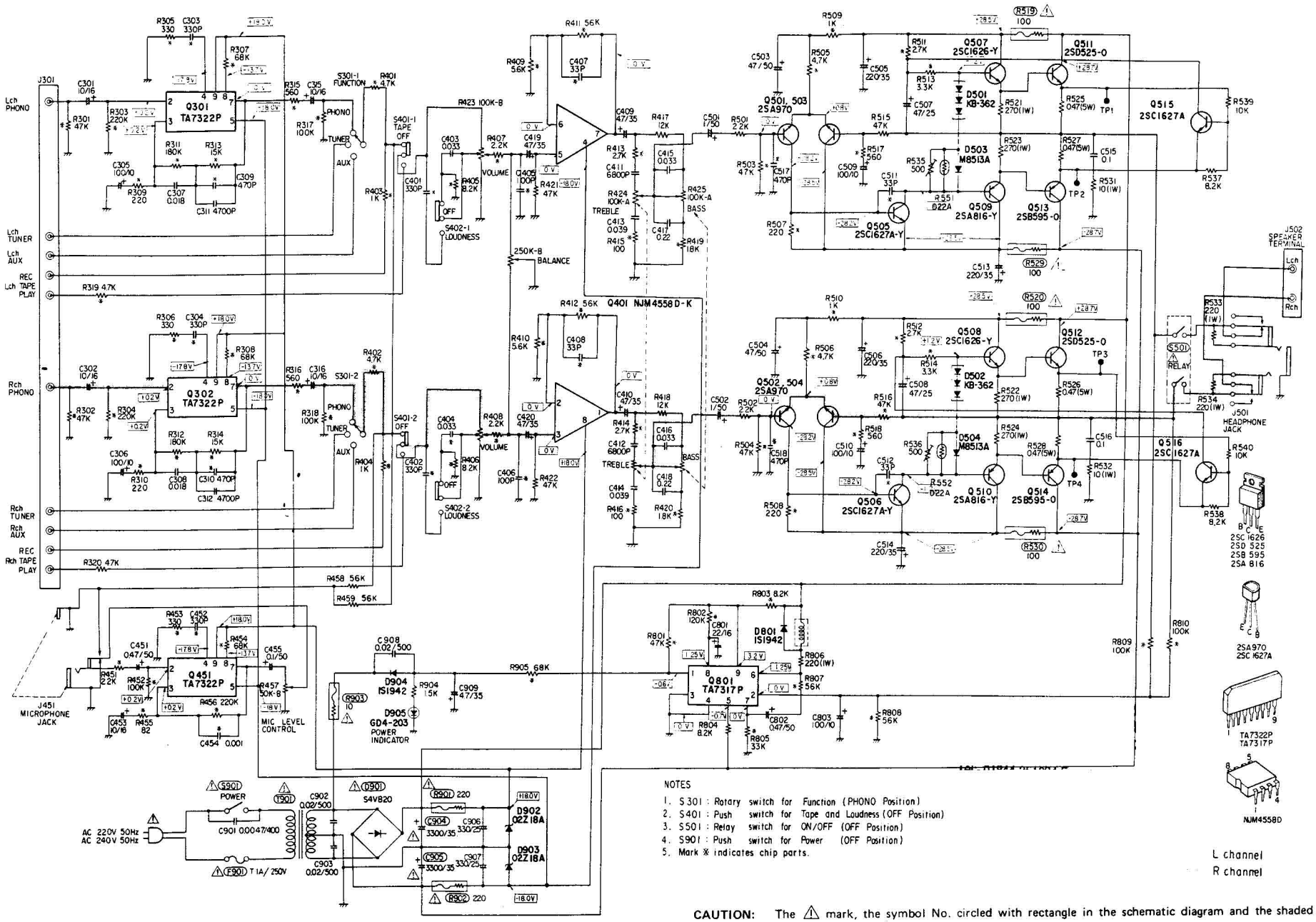
L = (or means) minimum value
H = (or means) maximum value

CAUTION: ON P.C. BOARD HANDLING
1) Avoid vibration and shock.
2) Do not bend and twist.

Symbol No. / Item	R301 302	R303 304	R306	R307 308	R309 310	R311 312	R313 314	R315 316	R317 318	R319	R401 402	R403 404	R405 406	R408	R409 410	R411 412	R413 414	R416	R419 420	R451	R452
L	46K	—	33K	12K	27K	—	15K	14K	65K	4.5K	5K	1K	8.5K	2K	6K	16K	3K	2.8K	1.8K	2K	15K
H	46K	—	33K	40K	27	—	15K	15K	100K	4.5K	5K	1K	8.5K	2K	6K	32K	3K	2.8K	1.8K	2K	100K

Symbol No. / Item	R453	R454	R455	R456	R503 504	R506	R507 508	R509 510	R511 512	R513 514	R515 516	R518	R801	R802	R803	R805	R807	R808	R809	R810	R905
L	340	—	760	30K	10K	—	1.6K	550	2.5K	3.5K	44K	550	18K	11.5K	8K	12K	55K	11K	28K	30K	38K
H	340	12K	760	200K	45K	22K	1.6K	550	2.5K	3.5K	44K	600	18K	20K	8K	13.5K	55K	12.5K	34K	40K	70K

6. SCHEMATIC DIAGRAM



NOTES

1. S301 : Rotary switch for Function (PHONO Position)
2. S401 : Push switch for Tape and Loudness (OFF Position)
3. S501 : Relay switch for ON/OFF (OFF Position)
4. S901 : Push switch for Power (OFF Position)
5. Mark ※ indicates chip parts.

Figure 12.

CAUTION: The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

7. ADJUSTMENTS

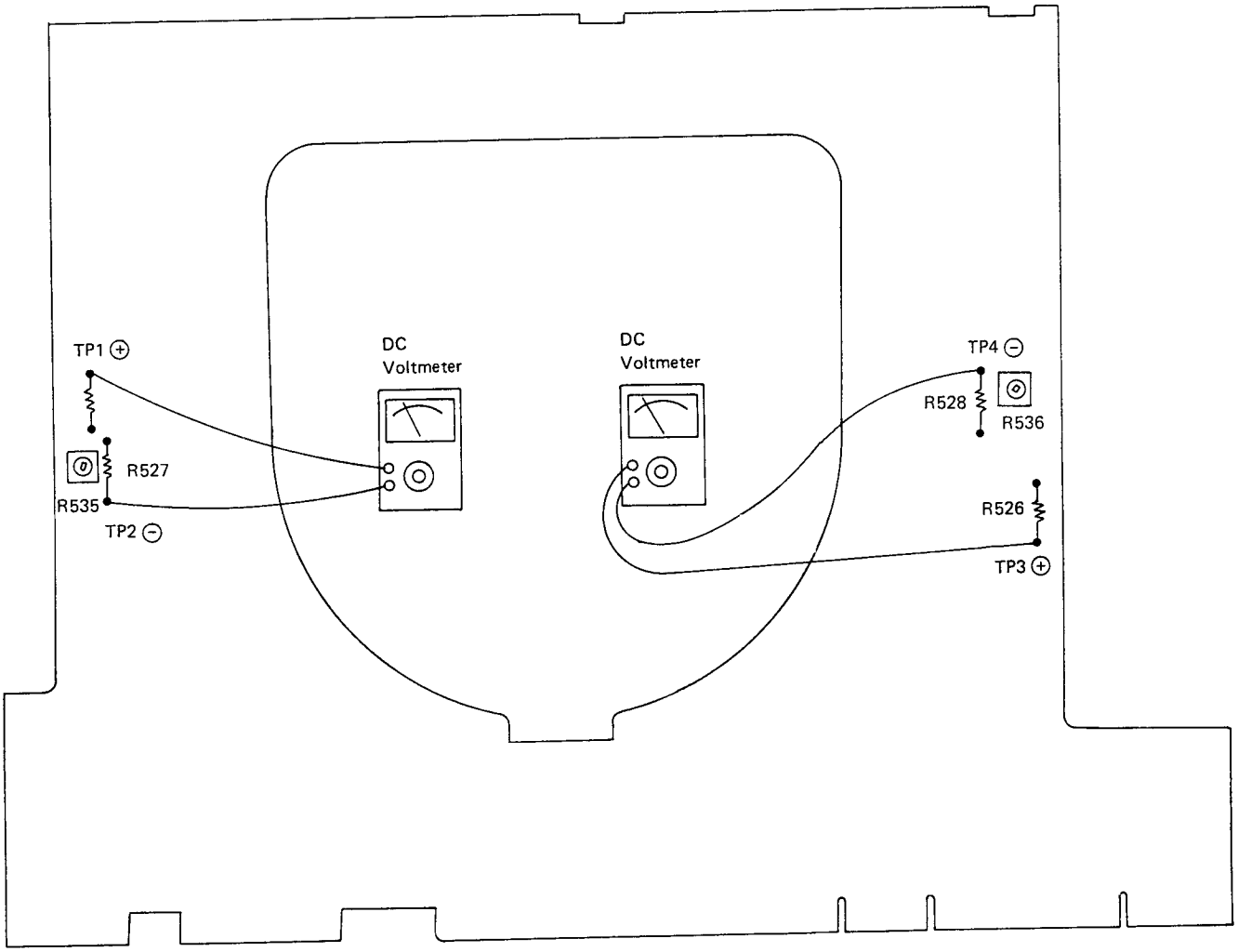


Figure 13. Top View of P.C. Board

IDLE CURRENT ADJUSTMENT

Set the Function Switch to PHONO Position, Tape Monitor Switch to OFF Position, Loudness Switch OFF Position and Volume Control Knob MINIMUM Position.

■ LEFT CHANNEL

1. Connect a DC Voltmeter (test range 0.3V) to test Points TP1(+) and TP2(−).
2. Adjust the Semi-fixed Resistor (R535) for 10mV.
3. Proceed with the adjustment in 60 seconds after the Power Switch is turned on.

■ RIGHT CHANNEL

1. Connect a DC Voltmeter (test range 0.3V) to test Points TP3(+) and TP4(−).
2. Adjust the Semi-fixed Resistor (R536) for 10mV.
3. Proceed with the adjustment in 60 seconds after the Power Switch is turned on.

8. CABINET PARTS LOCATIONS

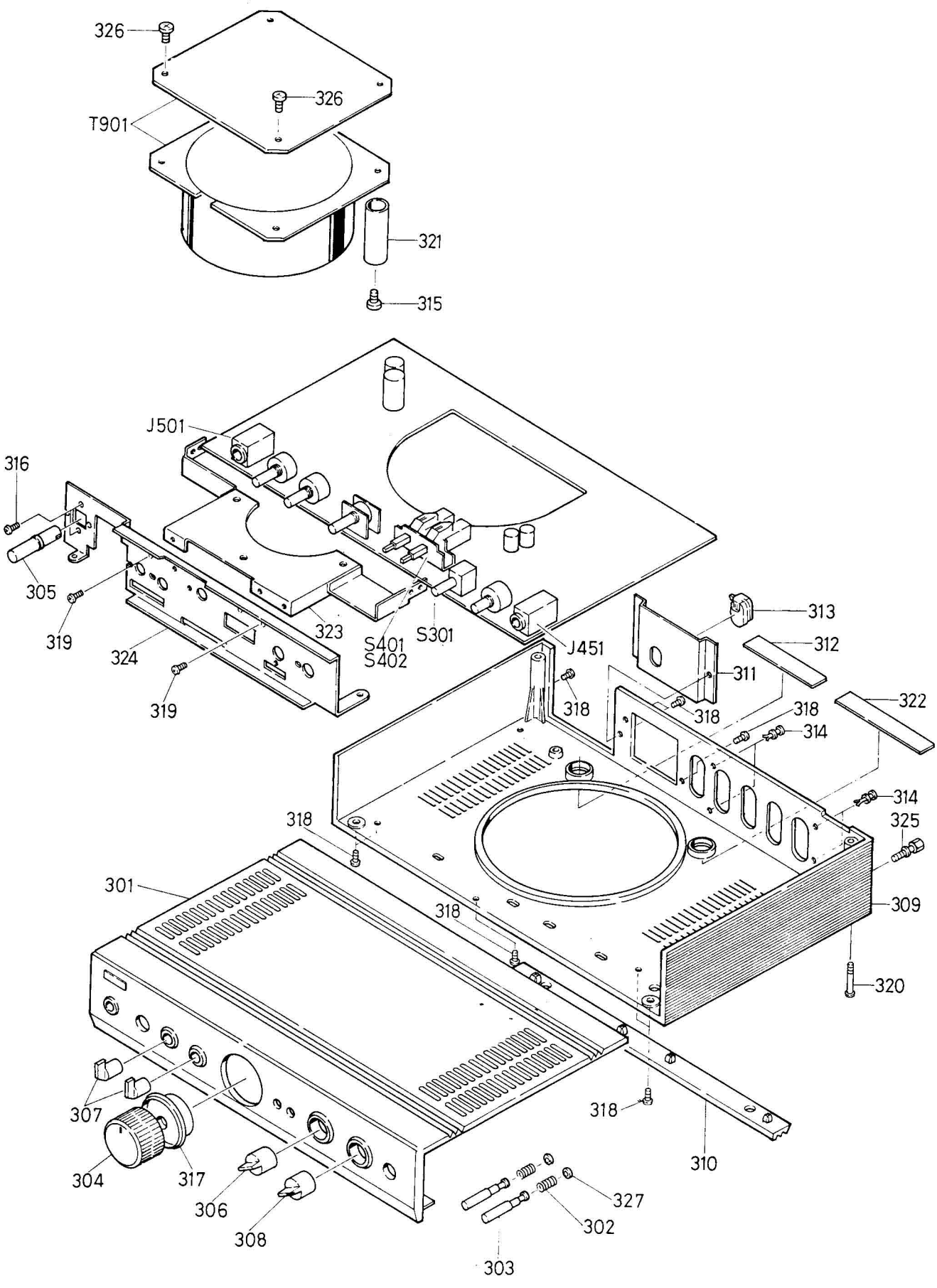


Figure 14.

9. PARTS LIST

CAUTION: The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
		CABINET PARTS
301	22821491	Panel Ass'y
302	25772471	Spring, Push Knob
303	25837237	Knob, Push (TAPE/ LOUDNESS)
304	22826257	Knob, Volume
305	22824329	Knob, Power
306	22826223	Knob, Function
307	22826269	Knob, Lever (BASS/TREBLE)
308	22826264	Knob, Microphone Level
309	22831577	Chassis
310	22874045	Leg
312	22864305	Nameplate (TE)
312	22864308	Nameplate (TU, AY)
313	25845528	Bushing, Power Cord
314	22705026	Rivet, 3ø x 6.5mm
315	22707040	Screw (BID), 4ø x 6mm
316	22707066	Screw (BID), 3ø x 6mm
317	22826255	Knob, Balance
318	22707327	Screw (BID), 3ø x 8mm, Tapping
319	22701326	Screw (BID), 3ø x 8mm. Tapping
320	22707328	Screw (BID), 3ø x 45mm
321	22830137	Stud
322	22864306	Label, Caution
325	22162327	Terminal, Ground
326	22707467	Screw (BID), 4ø x 8mm, Tapping
327	25764536	Washer, Nylon, Push Knob
		ICS, TRANSISTORS AND DIODES
Q301, 302		IC, TA7322P
Q401	22114594	IC, NJM4558D-K
Q451		IC, TA7322P
Q501, 502		Transistor, 2SA970-GR-GR/BL
Q503, 504		Transistor, 2SA970-GR-GR/BL
Q505, 506		Transistor, 2SC1627A-Y
Q507, 508		Transistor, 2SC1626-Y
Q509, 510		Transistor, 2SA816-Y
Q511, 512		Transistor, 2SD525-O
Q513, 514		Transistor, 2SB595-O
Q515, 516		Transistor, 2SC1627A-Y
Q801		IC, TA7317P
D501, 502	22115560	Diode, KB362
D503, 504		Diode, M8513A-O
D801		Diode, 1S1942
⚠ D901	22115561	Diode, S4VB20-S
D902, 903		Diode, O2Z18A
D904		Diode, 1S1942
D905	22115515	Diode (LED), GD4-203-RED

Symbol No.	Part No.	Description
		ELECTRICAL PARTS
S301	22195018	Switch, Rotary (FUNCTION)
S401, 402	22195418	Switch, Push (TAPE/ LOUDNESS)
⚠ S501	22148650	Relay
⚠ S901	22195445	Switch, Push (POWER)
⚠ T901	22223656	Transformer, Power (TE)
⚠ T901	22223720	Transformer, Power (TU, AY)
J301	22163770	Jack, US-10P
J451, 501	22163699	Jack, Microphone/Headphone
J502	22162456	Terminal, 4P (Speaker)
⚠ F901	22144337	Fuse, 1A/250V
	22176286	Cord, Power (TE)
	22176536	Cord, Power (TU)
	22176588	Cord, Power (AY)
		CAPACITORS J = ±5%, K = ±10%, P = –0 to +100%, Z = –20 to +80%
C301, 302	22440331	Electrolytic, 10mfd, 16V
C303, 304	22343331	Ceramic, 330pF, 50V, K (Chip)
C305, 306	22483101	Electrolytic, 100mfd, 10V
C307, 308	22371183	Mylar, 0.018mfd, 50V, J
C309, 310	22349471	Ceramic, 470pF, 50V, K (Chip)
C311, 312	22371472	Mylar, 4700pF, 50V, J
C315, 316	22440334	Electrolytic, 1mfd, 50V
C401. 402	22343331	Ceramic, 330pF, 50V, K (Chip)
C403, 404	22371333	Mylar, 0.033mfd, 50V, J
C405, 406	22362101	Ceramic, 100pF, 50V, J (Chip)
C407, 408	22361330	Ceramic, 33pF, 50V, J (Chip)
C409, 410	22440333	Electrolytic, 4.7mfd, 35V
C411, 412	22371682	Mylar, 6800pF, 50V, J
C413, 414	22371393	Mylar, 0.039mfd, 50V, J
C415, 416	22371333	Mylar, 0.033mfd, 50V, J
C417, 418	22371224	Mylar, 0.22mfd, 50V, J
C419, 420	22440333	Electrolytic, 4.7mfd, 35V
C451	22440332	Electrolytic, 0.47mfd, 50V
C452	22343331	Ceramic, 330pF, 50V, K (Chip)
C453	22440331	Electrolytic, 10mfd, 16V
C454	22360392	Ceramic, 0.001mfd, 50V, K (Chip)
C455	22488108	Electrolytic, 0.1mfd, 50V
C501, 502	22440334	Electrolytic, 1mfd, 50V
C503, 504	22488470	Electrolytic, 47mfd, 50V

Symbol No.	Part No.	Description
C505, 506	22447221	Electrolytic, 220mfd, 35V
C509, 510	22483101	Electrolytic, 100mfd, 10V
C511, 512	22460149	Ceramic, 33pF, 50V, J (Chip)
C513, 514	22447221	Electrolytic, 220mfd, 35V
C517, 518	22360362	Ceramic, 470pF, 50V, K (Chip)
C801	22485220	Electrolytic, 22mfd, 16V
C802	22440332	Electrolytic, 0.47mfd, 50V
C803	22483101	Electrolytic, 100mfd, 10V
⚠ C901	22340150	Ceramic, 0.0047mfd, AC 400V, M
C902, 903	22340032	Ceramic, 0.02mfd, 500V, Z
⚠ C904, 905	22440293	Electrolytic, 3300mfd, 35V
C906, 907	22486331	Electrolytic, 330mfd, 25V
C908	22340032	Ceramic, 0.02mfd, 500V, Z
C909	22440333	Electrolytic, 4.7mfd, 35V

RESISTORS

All resistors are 1/4W, ±5% carbon film unless otherwise noted.

R301, 302	22555473	47K ohm	(Chip)
R303, 304	22555224	220K ohm	(Chip)
R305, 306	22555331	330 ohm	(Chip)
R307, 308	22555683	68K ohm	(Chip)
R309, 310	22555221	220 ohm	(Chip)
R311, 312	22555184	180K ohm	(Chip)
R313, 314	22555153	15K ohm	(Chip)
R315, 316	22555561	560 ohm	(Chip)
R317, 318	22555104	100K ohm	(Chip)
R319, 320	22555472	4.7K ohm	(Chip)
R401, 402	22555472	4.7K ohm	(Chip)
R403, 404	22555102	1K ohm	(Chip)
R405, 406	22555822	8.2K ohm	(Chip)
R407, 408	22555222	2.2K ohm	(Chip)
R409, 410	22555562	5.6K ohm	(Chip)
R411, 412	22555563	56K ohm	(Chip)
R413, 414	22555272	2.7K ohm	(Chip)
R415, 416	22555101	100 ohm	(Chip)
R417, 418	22545123	12K ohm	
R419, 420	22555182	1.8K ohm	
R421, 422	22545473	47K ohm	
R423	22651515	Variable, 100K/250K ohm, VOLUME/BALANCE	
R424, 425	22651503	Variable, 100K ohm, BASS/TREBLE	
R451	22555222	2.2K ohm	(Chip)
R452	22555104	100K ohm	(Chip)
R453	22555331	330 ohm	(Chip)

Symbol No.	Part No.	Description	
R454	22555683	68K ohm	(Chip)
R455	22555820	82 ohm	(Chip)
R456	22555224	220K ohm	(Chip)
R457	22628405	Variable, 50K ohm, MIC LEVEL	
R458, 459	22555563	56K ohm	
R501, 502	22555222	2.2K ohm	
R503, 504	22555473	47K ohm	(Chip)
R505, 506	22555472	4.7K ohm	(Chip)
R507, 508	22555221	220 ohm	(Chip)
R509, 510	22555102	1K ohm	(Chip)
R511, 512	22555272	2.7K ohm	(Chip)
R513, 514	22555332	3.3K ohm	(Chip)
R515, 516	22555473	47K ohm	(Chip)
R517, 518	22555561	560 ohm	(Chip)
⚠ R519, 520	22500122	100 ohm, Fusible	
R521, 522	22570267	270 ohm, 1W, J, Metal Oxide Film	
R523, 524	22570267	270 ohm, 1W, J, Metal Oxide Film	
R525, 526	22500187	0.47 ohm, 5W, K, Metal Film	
R527, 528			
⚠ R529, 530	22500122	100 ohm, 1/4W, J, Fusible	
R531, 532	22570250	10 ohm, 1W, J, Metal Oxide Film	
R533, 534	22570266	220 ohm, 1W, J, Metal Oxide Film	
R535, 536	22658518	Semi-fixed, 500 ohm	
R537, 538	22555822	8.2K ohm	
R539, 540	22555103	10K ohm	
R551, 552		Termistor, D22A	
R801	22555473	47K ohm	(Chip)
R802	22555124	120K ohm	(Chip)
R803	22555822	8.2K ohm	(Chip)
R804	22555822	8.2K ohm	
R805	22555333	33K ohm	(Chip)
R806	22570266	220 ohm, 1W, J, Metal Oxide Film	
R807	22555563	56K ohm	(Chip)
R808	22555563	56K ohm	(Chip)
R809, 810	22555104	100K ohm	(Chip)
⚠ R901, 902	22500117	220 ohm, 1/4W, J, Fusible	
⚠ R903	22500130	10 ohm, 1/4W, J, Fusible	
R904	22555152	1.5K ohm	
R905	22555683	68K ohm	(Chip)

ACCESSORY

	22902389	Owner's Manual

TOSHIBA CORPORATION
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